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Effect of Strengthening Family Coping Resources on Emotion Regulation of Family Caregivers of Patients with Schizophrenia

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Abstract

Background: Strengthening the coping resources as an instruction for anxiety-regulation may affect the emotion-regulation of families. Regarding the significant role of families in health of these patients, it seems that interference in strengthening coping resources affects their emotion-regulation.

Aim: This study aimed to determine the effect of strengthening family coping resources on the emotion-regulation of schizophrenic patients' caregivers.

Method: This quasi-experimental research was conducted on families with hospitalized schizophrenic patients in one of the most prominent psychiatric centers in the Northeast of Iran in 2018. The participants were assigned to intervention (n=29) and control (n=31) groups. A short revised form of Emotion-Regulation Questionnaire was utilized as data collection tool. The intervention based on strengthening family coping resources (SFCR) was administered in three modules and 15 group sessions (groups of 6-8 individuals) according to the instructions of the multi-family model of Kisser et al. On the other hand, the controls received routine cares in hospital wards. The data were analyzed in SPSS software version (16) using independent and paired t-tests.

Results: The groups were homogenous in terms of demographic characteristics. The result of independent t-test demonstrated a significant difference in the mean score of revaluation (P=0.001) and suppression (p=0.001) in the intervention group, compared to the control group, after the intervention.

Implications for Practice: This intervention can guide clinicians on how to implement a family-centered care program to reduce the burden of caring schizophrenic patients through gaining family support in the efficient care of these patients.

Keywords: Anxiety, Emotion regulation, Family, Schizophrenia

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Introduction

Schizophrenia is a lifelong, chronic, and extremely disabling illness in adulthood (1). The estimated prevalence of schizophrenia has been reported as 1% throughout life (2). Schizophrenia imposes a heavy financial burden on the healthcare system all over the world. It is estimated that more than 150 billion dollars each year are spent treating schizophrenia just in the United States of America. This disorder is associated with decreased life expectancy, and schizophrenic patients live up to 15 years shorter than those who do not suffer from this disease. Moreover, 5-10% of them have a far greater risk of committing suicide (2). The effects of this disorder are classified into three levels of patients, caregivers and families, and society (3, 4).

Not only does it affect the patients but it imposes a great burden on society by frequent hospitalizations, as well as long-term economic and psychological supports. The burden of this disorder falls on health caregivers and patients' families due to their responsibility for caregiving and transferring care from the inpatient ward to the outpatient ward (4). The patients' families, as the central caregivers, are always under pressure, and many factors threaten their physical and psychological health (5). The frequent recurrences and cognitive-social dysfunction are of great concern to families, and they always face unpredictable stressful events and weird behaviors from their relatives (6). Eventually, they feel desperate and without any hope of the patient's recovery and grief over the loss of a loved one. On the other hand, external stressful factors, such as family isolation and stigma, have many psychological effects, including guilt, loneliness, and also incapability to care for their patient (8). All the above-mentioned factors reduce the emotion-control and resilience of family and increase their anxiety (9). Variety and intensity of caring roles increase the psychological pressure of family caregivers, and it may reduce the physical and psychological health of family caregivers as a hidden disease (10) if left untreated.

The researches show that emotions influence many aspects of daily life and coping with pressures and crises of life. Emotions as biological reactions are induced when a person recognizes a situation with significant opportunities and challenges. Therefore, they make cohesive reactions to major environmental events (11). Emotions can influence physiologic responses, social interactions, and mental processes, such as attention, decision making, and memory at any moment (12). Emotion-regulation helps families of schizophrenic patients experience less stress and psychological traumas during the process of caregiving and its subsequent problems and burden; moreover, it empowers them to cope with problems. In this regard, in their study, Moskowitz et al. (2019) suggested that emotion-regulation training program promotes positive emotions and reduces anxiety and depression in caregivers of patients with dementia (13).

Furthermore, a meta-analysis study conducted by Ashcroft et al. (2018) indicated that direct psychological interventions reduced re-hospitalization and recurrence of the illness (14).

The related studies performed on families of schizophrenic patients have pointed to some interventions, such as family group therapy (15), family regular therapy (16), community-based interventions (17), individual family training (18), psychological intervention (18), a cognitive-behavioral intervention based on needs (7), and emotion-regulation intervention (19). These studies are indicative of the peculiar role of families in the provision of care to schizophrenic patients. Strengthening coping resources is also one of the effective and useful approaches which can be adopted by the families of schizophrenic patients. It is one of the significant clinical functions which can be regarded as an instruction to cope with anxieties or great sufferings of life. This approach utilizes the program hypothesis and daily activities as a compatibility resource in several ways from how the rehabilitation counselors come to a conclusion with family members to presenting an instruction of each session to the family, solely by counselors. Accordingly, Kiser et al. (2010) designed Strengthening Family Coping Resources to support families with stressful conditions (20). This intervention aims to reduce the effect of chronic trauma on family caregivers and increase the supportive performance of family through improving the coping strategies and investigating the unpredictable and uncontrollable nature of family stressors and threats (20, 21).

There is a paucity of studies on the implementation of strengthening coping resources of families with schizophrenic patients. For instance, Kazemian et al. (2019) investigated the effect of this intervention on the resilience of families with schizophrenic patients (22). There is another study that assessed the effect of this intervention on families with chronic trauma, such as health care provision to children with psychological disorders. The result of the mentioned study indicated that this intervention

decreased the relevant symptoms of this trauma among children (20).
However, strengthening family coping resources as one of the effective factors on emotion-regulation has not been directly investigated. Since family satisfies diverse physical, mental, and emotional needs (23), families of schizophrenic patients contribute significantly to healthcare provision, following up on the treatment, and improving the health of patients. Therefore, it is required to take the necessary measures to strengthen their coping resources. According to the fact that strengthening coping resources is an instruction to cope with anxieties or psychological traumas, the present research aimed to determine the effect of strengthening family coping resources on the emotion-regulation of schizophrenic patients' caregivers.

Methods

This quasi-experimental study was carried out on families (the central caregivers) of schizophrenic patients in one of the most prominent psychiatric centers with 512 hospital beds in the Northeast of Iran in 2018. The sample size was determined based on the preliminary study on 20 eligible family caregivers. An estimated 29 people were assigned to each group by "comparing the mean and standard deviation of both communities", calculating the mean and standard deviation of the total score of emotion-regulation in intervention group (27.4±5.1) and control group (26.2±4.5) with confidence coefficient of 95% and testability of 85%. On a final note, a number of 33 cases were assigned to each group (66 in total) considering a 15% sample attrition.
The inclusion criteria were as follows: 1) be a first-degree relative and the central caregiver of a patient, 2) residency at the same place as the patient, 3) a minimum of third-grade high school degree, 4) the age range of 18-60 years old, 5) lack of known mental disorders, 6) non-use of any psychiatric medication, 7) no history of drug abuse, and 8) no criminal record. On the other hand, the exclusion criterion was patient discharge from the hospital.
The data collection tools included a demographic information form and the Emotion Regulation Questionnaire (ERQ). The demographic information form consisted of four questions regarding gender, age, education, and relationship with the patient. The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) was designed to assess and measure emotion regulation strategies (24). The questionnaire used in the present study was the short and revised form comprising of 10 items. The ERQ includes two subscales of re-evaluation and suppression consisting of 6 and 4 items, respectively. The participants completed a 7-point Likert scale ranging from "extremely disagree=1" to "extremely agree=7 ". The focus of the re-evaluation subscale is on antecedents, while the suppression subscale concentrates on the response. The higher score in re-evaluation shows more experience and positive emotion expression and less negative emotion expression. The higher score in prevention is suggestive of less experience and positive emotion expression and more negative emotion expression. To confirm the validity of the ERQ, the forward and backward post-translation tool was utilized by seven psychology professors. The reliability of this questionnaire was calculated at 0.76 using Cronbach's alpha, and test-retesting reliability of ERQ was measured at 0.96 for 3 months.
The participants were selected by purposive non-probability sampling. Before the commencement of the study, the approval was obtained from the ethics committee of Mashhad University of Medical Sciences. After reviewing the patients' records and a short interview with families in question (the central caregivers) who referred to the ward at the time of the appointment, the researcher selected the participants and put them on the list (n=70). Thereafter, the researcher asked them to attend preliminary sessions before starting the main sessions via telephone call (preliminary sessions were held for 7 groups of 10 subjects). The inclusion criteria of the study were re-evaluated in preliminary session; moreover, the researcher evaluated the following criteria:) the history of exposure to a family member diagnosed with schizophrenia, 2) current symptoms of the distress of family caregivers in exposure to schizophrenia, and 3) the effect of care provision to a schizophrenic patient on family caregivers. The 66 eligible individuals who met the inclusion criteria received sample code. To randomly assign subjects to two groups, the researcher wrote the codes of participants on paper and folded them. Subsequently, the researcher randomly assigned the participants to intervention and control groups (n= 33). Both groups underwent a pre-test. The intervention group received the intervention based on the strengthening coping resources approach, while the control group received regular care of the ward. In the intervention group, four participants were excluded from the study due

to the patient's deteriorating condition (n=1) and absence in more than four sessions (n=3). On the other hand, in the control group, two participants were ruled out from the study due to non-attendance in the post-test. Therefore, 29 cases in the intervention group and 31 participants in the control group entered the data analysis phase.

Interventions based on Strengthening Family Coping Resources were implemented according to the instruction of the multi-family model of Kiser et al. (2015). These interventions were made in three modules and for 15 group sessions (groups of 6-8 individuals) that are presented in detail in Table 1 (21). The intervention group consisted of four groups: (n=6), (n=7), (n=8), (n=8). Each group received 15 intervention sessions. Two 120-50 min sessions were held weekly (Sundays and Thursdays) in the Ibne-Sina psychiatric hospital of Mashhad. Therefore, as illustrated in Table 1, each session was presented by a Ph.D. of clinical psychology and one psychiatric nurse as a facilitator who worked in the Ibne-Sina psychiatric hospital. Topics were provided in group discussion and question and answer; thereafter, the assignments of the next session were determined according to the provided topics to implement the presented subjects. The control group received regular care of the wards. The data collection was carried out in two levels of pre-intervention and post-intervention by a researcher who was not affiliated with the research team was blind to the intervention.

Table 1. Details of performed intervention sessions

Module	Title of sessions		Performed activities
Module 1: Introductions and daily activities	Before sessions	Evaluating trauma and family performance	-Introducing and explaining the history of family member disease diagnosis (20 min) -Examining the symptoms of suffering from patients' caregiving and family performance, the effect of caring for a schizophrenic patient on family caregivers (120 min)
	Session 1	Explaining family stories	-activity 1: Encouraging interpersonal interactions, strengthening the sense of belonging to the group by explaining stories of family caregivers (30 min) - Activity 2: what are the family customs (identifying and estimating customs)? (30 min) - Activity 3: explaining family stories and making interaction (35 min) -Activity 4: establishing group rules and understanding social media support in group (15 min) -Activity 5: conclusion (10 min)
	Session 2	Family customs and traditions	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: drawing a table of customs and traditions of each family and the importance of being aware of the customs of each family (45 min) -Activity 3: sharing important family customs and traditions (15 min) -Activity 4: accurate planning based on important customs of each family (20 min) -Activity 5: conclusion (10 min)
	Session 3	Family memories	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: sharing memories and identifying the importance and routine role in regular daily activities (30 min) -Activity 3: identifying the efficiency and inefficiency of family routines (30 min) -Activity 4: discussing family routines that support the health and function of the family (20 min) -Activity 5: conclusion (10 min)

Table 1 Continued.

Module 2: Supportive coping resources	Session 4	Feeling safe 1	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: identifying feeling safe and relaxed in family caregivers (40 min) -Activity 3: explaining family stories 2 and helping family caregivers in strengthening safe feeling toward the schizophrenic patients of the family (15 min) -Activity 4: strengthening families to talk about negative events (25 min) -Activity 5: conclusion (10 min)
	Session 5	Feeling safe 2	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: explaining family stories and sharing the experiences (30 min) -Activity 3: writing safe feelings (25 min) -Activity 4: increasing awareness in the context of limitations and predictability of safe feeling (25 min) -Activity 5: conclusion (10 min)
	Session 6	Social support	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: increasing the awareness of identifying and evaluating social support resources (30 min) -Activity 3: supporting family members to cope with stresses and threads and facilitating problem-solving in the family (50 min) -Activity 4: conclusion (10 min)
	Session 7	Life choices	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: encouraging family to plan for life choices (30 min) -Activity 3: life choices and providing appropriate opportunities for growth and development (30 min) -Activity 4: planning for the future of the family (20 min) -Activity 5: conclusion (10 min)
	Session 8	Spirituality and values	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: awareness of the meaning and the philosophy of life by asking some questions like "what are the resources of hope?" (15 min) -Activity 3: examining the values of life and family, helping family caregivers to evaluate spirituality and enrich the meaning of their life experiences, helping the family in discussing and accepting the shared values (65 min) -Activity 4: conclusion (10 min)
	Session 9	Problem-solving skills	-Activity 1: encouraging interpersonal interactions, facilitating discussion among family caregivers about planned activities in family and reception (30 min) -Activity 2: Selecting the appropriate approach for problem-solving and encouraging to explain emotions (20 min) -Activity 3: making problem-solving skills relevant to the planned family activities (45 min) -Activity 4: demonstrating the effect of stopping routines on family performance, sharing emotional and psychological family caregivers' responses toward stopping routines (15 min) -Activity 5: conclusion (10 min)

Table 1 Continued.

	Session 10	Talking about what occurred	-Activity 1: helping family caregivers understand the importance of speaking about trauma, training and evaluating not to avoid from what that has occurred, partnership with families to decide and develop new expression skills about telling the story of caring for their patients (30 min) -Activity 2: non-verbal communication (15 min) -Activity 3: being aware of personal responses (25 min) -Activity 4: speaking about topics and stressful events, and planning for facing the distresses shared by the family or speaking about their problems (40 min) -Activity 5: conclusion (10 min)
	Session 11	When something bad happens 1.	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: explaining painful issues relevant to caring for the patient (15 min) -Activity 3: speaking about important and harmful issues and increasing the ability of family caregivers in sharing issues (65 min) -Activity 4: conclusion (10 min)
Module 3: Composition and decomposition of trauma and injury	Session 12	When something bad happens 2.	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: sharing experiences (15 min) -Activity 3: strengthening and practicing the use of meditation methods (10 min) -Activity 4: explaining the stories that are harmful to families and helping family caregivers create a new story for caring for the patient (55 min) -Activity 5: conclusion (10 min)
	Session 13	Identification of trauma	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: processing traumas and increasing the ability of family in giving positive meaning to their experiences (50 min) -Activity 3: developing storytelling skills and discussing the problems successfully (30 min) -Activity 4: conclusion (10 min)
	Session 14	Occurrence of positive events.	-Activity 1: encouraging interpersonal interactions and reception (30 min) -Activity 2: planning for strengthening good feelings through implementing interesting programs (30 min) -Activity 3: promotion of joking and smiling in family and reduction of stress (30 min) -Activity 4: creating a good meaning and the opportunity to celebrate events (20 min) -Activity 5: conclusion (10 min)
	Session 15	Celebration	-Activity 1: encouraging interpersonal interventions, reception, and practicing the planned celebration (45 min) -Activity 2: enriching celebrations, reviewing objectives and group evaluation -Activity 3: planning for customs, and traditions (20 min) -Activity 4: conclusion (15 min)

The inclusion required the ethics committee approval and written informed consent of participants, and the information was kept confidential.
The obtained data were analyzes in SPSS software (version 16). First, data normality was determined through the Kolmogorov-Smirnov test. In the pre-intervention phase, the Chi-square test, Fisher's exact test, and independent t-test were utilized to investigate the homogeneity of qualitative and quantitative variables. Due to the normality of variables and for the intergroup comparison of dependent variables, the independent t-test was used. Moreover, the paired t-test was used for intergroup comparison. The confidence level of 95% and the significance level of $\alpha<0.05$ were considered in the administered tests.

Results

The mean age scores of participants in the intervention group and the control group were reported as 12.8±36.3 and 10.7±37.4 years, respectively. The results of the statistical independent t-test, Fisher's exact test, and Chi-square test indicated homogeneous demographic information (age, gender, education, and relationship to the patient) in participants of the intervention and control group (Table 2).
The results of the statistical independent t-test demonstrated a significant statistical difference in the mean score of the re-evaluation of the intervention group, in comparison with the control group (P=0.001). In addition, the results of the paired t-test showed a significant statistical difference in the intervention group in terms of the mean score of re-evaluation in the pre-intervention and post-intervention phase, compared to the control group (P<0.001); nonetheless, there was no significant difference in the control group (Table 3).
The results of the independent t-test suggested that the mean suppression score of the intervention group in the post-intervention phase was significantly lower, compared to the control group (P<0.001). In addition, the results of the paired t-test showed that the mean suppression score of the

Table 2. Demographic profile of families in intervention and control groups

Variable		Group		Test result
		intervention	control	
Age		36.3±12.8	37.4±10.7	P[1]=0.72
Gender	Female	20 (69)	20 (64.5)	P[2]= 0.71
	Male	9 (31.0)	11 (35.5)	
Education	Secondary school	13 (44.8)	11 (35.5)	P[3]=0.74
	Diploma	9 (31.0)	12 (38.7)	
	Academic education	7 (24.1)	8 (25.8)	
Family relationship to the patient	Mother	8 (27.6)	12 (38.7)	P[4]=0.84
	Father	6 (20.7)	7 (22.6)	
	Spouse	6 (207)	3 (9.7)	
	Sister	4 (13.8)	4 (12.9)	
	Brother	3 (10.3)	2 (6.5)	
	Child	2 (6.9)	3 (9.7)	

1. independent t-test
2. Fisher test
3. Chi-square test
4. Fisher's exact test

Table 3. Comparing the score of re-evaluation in pre-intervention and post-intervention phases in intervention and control groups

Variable	Intervention	Control	P-value, CI
Re-evaluation (before the intervention)	16.5±3.5	16.1±3.3	P*= 0.69
Re-evaluation (after intervention)	19.4±3.1	16.5±3.3	P*=0.001
Re-evaluation changes	2.4±2.9	1.1±0.4	P<0.001
P-value	P**<0.001	P**=0.08	

*Independent t-test
**Paired t-test

Table 4. Comparing the score of suppression in pre-intervention and post-intervention phases in intervention and control groups

Variable	Intervention	Control	P-value, CI
Suppression (before the intervention)	10.1±2.8	10.1±2.9	P*=0.97
Suppression (after the intervention)	7.3±1.6	9.2±2.3	P*=0.001
Suppression changes	3.2±-2.7	1.6±-0.9	P*=0.007
P-value	P**<0.001	P**=0.005	

*Independent t-test
**Paired t-test

intervention group in the post-intervention phase was significantly lower, compared to the pre-intervention phase (P=0.000). Furthermore, there was a significant reduction in the mean suppression score in the control group (Table 4).

Discussion

As evidenced by the obtained results, interventions based on the strengthening coping resources approach are efficient in the emotion-regulation of families with schizophrenic patients. Moreover, it was found that the mean re-evaluation score of families increased and the mean suppression score decreased after the implementation of interventions based on strengthening coping resources. Sadr et al. (2017) stated that a higher score in the re-evaluation aspect is indicative of more experience and positive emotion-expressions and less negative emotions. On the contrary, a higher score in the suppression aspect demonstrates less experience and positive emotion-expression and more negative emotions (25). In fact, the intervention based on strengthening coping resources promoted the re-evaluation component as a positive strategy and reduced the suppression component as a negative strategy. Sazvar et al. (2017) reported that after a psychological training based on acceptance and commitment, the level of expressed emotion decreased in families with bipolar patients (26). Another research investigated the effect of this intervention in families with chronic trauma, such as the provision of healthcare to children with a psychiatric disorder. The results of the mentioned study revealed that this intervention decreased the symptoms relevant to the trauma in these children (20). Although these studies are not similar to the present study regarding the implemented intervention, they are comparable in terms of performing a training intervention for families of patients with stressful conditions. Training interventions of these studies regulated the emotions of families through emotion-regulation.

Emotion-regulation is related to the relevant behaviors and conditions and regarded as coping strategies that increase the power of identifying and processing useful responses which empowers more constructive functions both in short and long term situations (27). Positive emotion-regulation of coping strategies affects strengthening the use of effective coping strategies and self-efficacy. Individuals with high emotion-regulation skills consider the stressful events a challenge and opportunity to learn, not a threat to their safety; therefore, they experience less physiological and emotional disorders (28).

In the present study, the intervention of strengthening coping resources included some sessions in which families could examine their performance and explain their problems facing schizophrenic patients. These sessions aimed to limit distractions, make meaningful plans, and regulate and qualify the joint activities and family relationships (29). Since the sessions were held in groups, families could benefit from the experiences and problems of other group members; moreover, they did not found themselves alone in caring for schizophrenic patients. This intervention strengthens emotion-regulation among family members, especially the caregivers, through common family discussions about spiritual beliefs and values, establishing common rules for regulation and cooperation of group members, throwing dinner parties to strengthen relationships, creating the sense of mutual security among family members, and reducing family conflicts. Along the same lines, a study performed by Kazemian et al. (2019) demonstrated that the strengthening coping resources approach increased the resilience of families of schizophrenic patients (22). Kiser et al. (2010) utilized the intervention of strengthening coping resources for families with trauma, and the results showed that the trauma symptoms reduced in these individuals (20).

Furthermore, some other studies confirmed the effect of strengthening coping resources approach on

psychological disorders. For instance, a study carried out by Choobdari et al. (2016) in Iran aimed to assess the effect of emotion-regulation training on the reduction of symptoms in students with Oppositional Defiant Disorder (ODD). The results of this study showed that emotion-regulation training reduced the symptoms of ODD in students (30). In their study, Azami et al. (2018) concluded that psychosocial treatment programs affected emotion-regulation strategies and also increased the re-evaluation component (as a positive strategy) and reduced the suppression score (as a negative strategy) in patients with post-traumatic stress disorder (31). Therefore, interventions based on strengthening coping resources provide some situations through the emotion-regulation of families. They help people to gain success in emotion-regulation, increase their life satisfaction, hope, happiness, and accurate planning, and manage the problems and challenges of life. Positive emotions are very important psychological resources that help individuals use effective coping methods to withstand psychological pressures. Interventions based on the strengthening coping resources approach is a kind of clinical intervention that strengthens family compatibility resources as a tool to improve the supportive function of family that is mostly influenced by harmful contexts. This intervention focuses on the natural occurrence of programs and family daily activities which is regarded as a compatibility resource, and the family regulates these programs.

One of the strengths of the current study is its applicability to families with hospitalized patients to prepare them for the stress of patients' home-care. On the other hand, the limitations of the present study included the impossibility of assessing families at the time of discharge and evaluating the effectiveness of intervention during follow up sessions.

Implications for Practice

The effect of this intervention on the emotion-regulation of patients' caregivers and families guides clinicians on how to implement a family-centered care program that reduces the burden of care in schizophrenic patients through gaining family support in the efficient care of patients.

Based on the results of the present research, it is suggested to carry out further studies to follow-up patients and families after discharge and utilize this intervention for families of discharged patients who experienced the burden and stress of home care.

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Conflicts of Interest

The authors declare that they have no conflict of interest regarding the publication of this article.

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